

Type 1 diabetes: Guide for friends

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Introduction

As a friend of someone who has type 1 diabetes, you may want to learn more about the condition.

This guide gives you the key facts about type 1 diabetes and what it's like to live with. It will also give you advice on any help you can give your friend.

We hope you find it interesting and useful.

What is type 1 diabetes?

Type 1 diabetes is an autoimmune condition.

For reasons we don't yet fully understand the immune system, which is meant to protect the body from viruses and bacteria, attacks and destroys the insulin producing cells in the pancreas called beta cells.

Insulin is crucial to life. When you eat, insulin is what moves the energy from your food, called glucose, from your blood into the cells of your body. When the beta cells in the pancreas fail to produce insulin, glucose levels in the blood start to rise and the body can't function properly. Over time this high level of glucose in the blood may damage nerves and blood vessels and the organs they supply.

Type 1 diabetes commonly appears in childhood, but can develop at any age.

Living with type 1 diabetes

Type 1 is treated by injecting insulin. Insulin can be given by injection or via an insulin pump.

The vast majority of people who are injecting [insulin](#) follow a basal-bolus regime. Basal-bolus is the term often used to describe a regime that involves taking two different types of insulin via multiple daily injections. A basal-bolus regime involves taking a long-acting form of insulin once or twice a day to keep [blood glucose levels](#) stable when they are not eating. This is known as the 'basal' injection.

It also includes taking a rapid-acting insulin before each [meal](#) to prevent rises in blood glucose levels resulting from eating carbohydrates or to correct elevated blood glucose levels between meals. This is known as the 'bolus' injection.

One of the main advantages of a basal-bolus regimen is that it attempts to mimic how the body releases insulin in people who do not have type 1. It also allows for flexibility around what is eaten and when. However, it usually involves taking between four and eight injections a day.

Another way of taking insulin is by using an insulin pump.

An insulin pump delivers [insulin](#) every few minutes in tiny amounts, 24 hours a day. It is usually about the size of a deck of cards, but can be much smaller. The insulin flows through a cannula which sits in the subcutaneous tissue (where you inject) and is changed by the pump user every few days.

Basal (background) [insulin](#) is programmed to meet the pump user's needs. The bolus insulin is delivered at the touch of a button to cover food or bring down a [high blood glucose level](#). Only rapid-acting insulin is needed and provides all their insulin requirements.

Insulin pumps reduce the need for multiple injections and give the user the ability to make smaller, more accurate adjustments to insulin delivery.

If you want to gain an insight into what it's actually like to live with type 1 diabetes this [Facebook page](#) is definitely worth a look. The page is hilarious (not type 1), but you may not get all the jokes!

What is insulin?

Insulin is a hormone produced by the beta cells in the pancreas which helps control blood glucose levels. Glucose is produced when the body digests carbohydrates in food. It is the body's main energy source and you cannot function without it.

Insulin acts as a key to get glucose from the bloodstream into the body's cells where it can be used for energy, or if there is too much, stored as fat.

If you have too little insulin in the bloodstream, your blood glucose level will go up and your body's cells will not have access to enough energy.

Conversely, if you have too much insulin (or you have done lots of exercise, or are ill or stressed) then glucose will be taken out of the bloodstream too quickly. Your blood glucose will go down, and your body will again not have easy access to the energy it needs.

What is blood glucose?

Glucose in our blood provides our bodies with energy. Blood glucose levels are measured in units called mmol/L (pronounced milli-moles-per-litre). The ideal ranges for someone with type 1 are:

- Before meals: 4-7 mmol/L
- Two hours after meals: 8-9 mmol/L
- At bedtime: 6-10 mmol/L

Why is this important to people with type 1?

A person with type 1 diabetes can't regulate their blood glucose. When they take insulin by injection or using an insulin pump they have to calculate how much insulin their body needs at any given point in the day or night. It is very difficult to get the amount of insulin given by injection or pump correct all the time to keep blood glucose in the normal range. Blood glucose is not just affected by how much insulin taken but also by exercise, stress, alcohol, food eaten, illness even the temperature outside. As a result blood glucose levels can fluctuate, sometimes quite dramatically.

Measuring blood glucose

This is measured with a blood glucose meter. A test strip is inserted into the blood glucose meter, your friend will then use a lancing device to prick their finger and a drop of blood is placed on the test strip. The blood glucose meter will read the amount of glucose in the blood. They will always test before they eat, before going to bed and before driving but will also test at other points in the day depending how they are feeling and what they have been doing. They may test at least six to 10 (or more) times a day!

Low blood glucose (Hypoglycaemia or hypo)

There might be times when someone with type 1 has too much [insulin](#) in their blood stream. This may be because they accidentally injected more than they needed, they've been more active

than normal, they haven't eaten or they've had less carbohydrate than they thought. No matter the cause, when their [blood glucose level](#) drops below 4mmol/L, this is called hypoglycaemia (or a 'hypo' for short).

For someone with type 1 diabetes any blood glucose reading below 4mmol/l is a cause for concern; **glucose is needed and fast**. Taking glucose and resting for a period of 10 -15 minutes allows the blood glucose to come back into the normal range.

What affect do hypos actually have?

When a person experiences a hypo they begin to develop symptoms which vary from person to person but can include shaking, cold sweats, aggression, changes in vision, changes in behaviour, clumsiness, tingling sensations throughout the body or a general feeling of being spaced out.

Interesting, but what does this mean for those around the person having the hypo?

Your friend may look white or feel clammy to the touch and may behave out of character as low blood glucose has an impact on the brain. Most of the time they will deal with the hypo themselves by testing their blood glucose and taking some glucose to bring the level back up to normal.

Treatments for hypos include sugary drinks like lucozade or coke (but **not** the diet variety), dextrose tablets or jelly babies.

With an ordinary hypo your friend will deal with it themselves. However, if they have a more severe hypo and their blood glucose goes lower, they may need your help getting sugar. Your friend may appear confused, shaking uncontrollably. When this happens, get your friend a sugary drink, or something sweet to eat like glucose tablets or sweets. Tell them to drink or eat as they may not be thinking clearly as a result of their low blood glucose.

On rare occasions, some hypos can be extremely severe and your friend may lose consciousness and go into a coma. If this happens, place them in the recovery position (if you know how to do this) and **immediately** call for an ambulance. Stay with your friend.

High blood glucose (Hyperglycaemia)

High blood glucose is any reading above 10mmol/l. This can happen sometimes without an obvious reason but can be caused by illness, not taking enough insulin and stress. If your friend's blood glucose is occasionally high you probably won't notice any change, although your friend maybe in a slightly worse mood, as high blood glucoses can be very frustrating! If blood glucose is repeatedly in the high range then the risk of developing some of the long term complications of diabetes increases. These include diabetic retinopathy (damage to the retina which can lead to blindness), permanent nerve damage, damage to the kidneys and damage to the heart and circulation.

High blood glucose and ketoacidosis

However, if blood glucose remains **very high for an extended period of time** then the body may start to produce ketones, which are **very dangerous**. Ketones are toxic to the body and can cause vomiting and cause breath to smell like pear drops. This state is called Diabetic

Ketoacidosis or DKA. If you think these symptoms may be occurring you should encourage your friend to check their blood glucose levels.

If DKA happens you will need to **get your friend medical help**.

Call for an ambulance and then contact their emergency contacts

For more info on DKA, visit our [website](#).

Frequently asked questions

Food - can you eat that?

There's no such thing as a 'diabetic diet'

For years, people with type 1 diabetes were told they needed to eat three meals and three snacks a day to keep their blood glucose levels from swinging too high or too low. Thankfully, with [modern insulin analogues and regimens](#), they no longer need such a regimented diet. They can eat a little or a lot depending on what they feel like doing.

Like anyone, it's important to ensure they are eating a healthy diet, but living with type 1 diabetes doesn't mean they need to cut sugar out of their diet completely.

For more information [visit the JDRF website](#).

What about exercise?

Exercise is an important part of everyone's general health, but it also helps to maintain good type 1 diabetes management.

Adjusting food and insulin around exercise can be tricky, as different types of exercise can have a different effect on blood glucose.

However, people with type 1 diabetes can have a normal exercise routine and some have even competed at the highest level. Golfer Scott Verplank the five times PGA tour winner has type 1 and Gary Mabbutt the footballer has type 1 he also completed at the highest level winning 16 cups playing for England.

Exercise can affect blood glucose, sometimes in unpredictable ways. Someone with type 1 diabetes will test their blood glucose more frequently before, during and after exercise and may have to take glucose or alter their insulin dose before they exercise.

For more information [visit the JDRF website](#).

Alcohol - can you drink?

People with type 1 diabetes can drink alcohol however they do need to be a bit more careful than people without type 1. Alcohol can lower blood glucose and for a person with type 1 being drunk has the added complication of masking the symptoms of hypoglycaemia. To prevent missing one, your friend will test their blood glucose more than usual when they're drinking.

If your friend is drunk stay with them and make sure they get home okay. If you want to learn more about alcohol and type 1 diabetes [visit the JDRF website](#).

The cure!

Currently there is no cure for type 1 diabetes. There are numerous research programmes in many parts of the world trying to understand what causes type 1 diabetes and to find a cure for it.

JDRF funds research projects which will help find a cure for type 1 diabetes. The charity also supports research projects which help improve the lives of people already living with the condition. As a result of these research projects, the cure is now closer than it's ever been. People around the world raise money to help us one day achieve a world without type 1 diabetes.

For more information [visit the JDRF website](#).

Conclusion

That's it, you've made it. Hopefully you should now know more about type 1 diabetes and what it's like to live with. The aim of this booklet has been to inform those who don't know much about the condition. Thanks for taking the time to read this.

More information?

You may find the following website useful if you would like some more info about type 1 diabetes - www.jdrf.org.uk.